

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

LISTING OF CLAIMS:

1. (Currently Amended) A laser arrangement, comprising
a resonant cavity that is resonant to one or more fundamental frequencies;
a solid state laser material provided in the resonant cavity for emitting at least one of said one or more fundamental frequencies when being irradiated by pump light;
pumping means for providing pump light to said laser material;
a non-linear optical element provided in the resonant cavity, said non-linear optical element being adapted to convert one or more of said fundamental frequencies into a frequency converted beam;
wherein at least one cavity mirror defining the resonant cavity is highly transmitting for said frequency converted beam;
~~characterized in that~~
wherein a quarter wave-plate and a retro-reflector for the frequency converted beam are arranged in series in the beam path outside the cavity adjacent to said cavity mirror, such that the frequency converted beam leaving the cavity through said mirror undergoes a polarization rotation and re-enters the cavity in a polarization state orthogonal to its original polarization state.

2. (Original) A laser arrangement as claimed in claim 1, wherein the cavity is defined by a first cavity mirror, a second cavity mirror and a folding mirror, said folding mirror defining a first cavity branch between said folding mirror and the first cavity mirror and defining a second cavity branch between said folding mirror and the second cavity mirror, the non-linear element being provided in the second branch, and wherein the second mirror and the folding mirror are both highly transmitting for the frequency converted beam.

3. (Currently Amended) A laser arrangement as claimed in claim 1 ~~or 2~~, wherein the retro-reflector (M4) has a radius of curvature and a position with respect to the resonant cavity in order for two cross-polarized output beams to overlap spatially and exit said cavity as a single beam.

4. (Currently Amended) A laser arrangement according to ~~any one of the preceding claims,~~ claim 1, wherein the non-linear element comprises a quasi phase-matching grating.

5. (Original) A laser arrangement according to claim 4, wherein the non-linear element comprises a periodically poled potassium-titanyl-phosphate (PP-KTP) crystal.

6. (Currently Amended) A laser arrangement according to ~~any one of the preceding claims,~~ claim 1, wherein the laser material comprises a neodymium-doped crystal selected from YAG, YVO₄ and GdVO₄.

7. (New) A laser arrangement as claimed in claim 2, wherein the retro-reflector (M4) has a radius of curvature and a position with respect to the resonant cavity in order for two cross-polarized output beams to overlap spatially and exit said cavity as a single beam.

8. (New) A laser arrangement according to claim 2, wherein the non-linear element comprises a quasi phase-matching grating.

9. (New) A laser arrangement according to claim 3, wherein the non-linear element comprises a quasi phase-matching grating.

10. (New) A laser arrangement according to claim 7, wherein the non-linear element comprises a quasi phase-matching grating.

11. (New) A laser arrangement according to claim 2, wherein the laser material comprises a neodymium-doped crystal selected from YAG, YVO₄ and GdVO₄.

12. (New) A laser arrangement according to claim 3, wherein the laser material comprises a neodymium-doped crystal selected from YAG, YVO₄ and GdVO₄.

13. (New) A laser arrangement according to claim 4, wherein the laser material comprises a neodymium-doped crystal selected from YAG, YVO_4 and GdVO_4 .

14. (New) A laser arrangement according to claim 5, wherein the laser material comprises a neodymium-doped crystal selected from YAG, YVO_4 and GdVO_4 .

15. (New) A laser arrangement according to claim 7, wherein the laser material comprises a neodymium-doped crystal selected from YAG, YVO_4 and GdVO_4 .

16. (New) A laser arrangement according to claim 10, wherein the laser material comprises a neodymium-doped crystal selected from YAG, YVO_4 and GdVO_4 .